MINUTES OF THE TAC MEETING OF THE WOOD RIVER WATERSHED ADVISORY GROUP
CAREY CITY HALL
TUESDAY, SEPTEMBER 28, 2004

Chairman Daryle James called the meeting to order with the following in attendance:

Daryle James	Chuck Pentzer - ISCC
Bob Simpson – City of Carey	Bill Davis - CAFO
Kevin Davidson – NRCS	Jennifer Claire – IDEQ

Jennifer Claire gave a presentation on the Little Wood River Subbasin, dated September 28, 2004.

The presentation included:

Pollutants in Little Wood River Subbasin: sediment, bacteria, nutrients, possibly temperature

Flow altered streams in the Little Wood River Subbasin:

Little Wood River Reservoir	Fish Creek Reservoir
Little Wood River Segment #3	Fish Creek below the reservoir
Little Wood River Segment #4	Dry Creek

TMDLs for Fish Creek above the Reservoir

SEDIMENT
Critical time period = April to June
Critical Flow = 69.7
Existing Load = 775.4 t/yr
Background Load = implicit
MOS Load = implicit
Total Available Load = 106.5 t/yr
Wasteload Allocation = 2.1 t/yr
Load Allocation = 104/4
% reduction = 86.3%

BACTERIA
Critical Time period = July to September
Critical Flow = 15.3 cfs
Existing Load = 604 col/100 ml
Background Load = 23 col/100ml
MOS Load = 57.6 col/100ml
Total Available Load = 495.4 col/100ml
Wasteload Allocation = 9.9 col/100ml
Load Allocation = 104.4 col/100ml
% reduction = 14.2%

NUTRIENTS
Critical period = July to September
Critical Flow = 15.3 cfs
Existing Load = 6.10 lbs/day
Background Load = 1.65 lbs/day
MOS Load = 0.41 lbs/day
Total Available Load = 2.06
Wasteload Allocation = 0.04 lbs/day
Load Allocation = 2.02 lbs/day
% reduction = 39.2

TMDLs for Fish Creek Below the Reservoir

NUTRIENT
Critical time period = July to September
Critical Flow = 33.5 cfs
Existing Load = 21.5 lbs/day
Background Load = 2.1 lbs/day
MOS Load = 1.8 lbs/day
Total Available Load = 14.2 lbs/day
Wasteload Allocation = 0.3 lbs/day
Load Allocation = 13.9 lbs/day
% reduction = 24.4%

SEDIMENT
Critical time period = April to July
Critical Flow = 82.8 cfs
Existing Load = 102.2 t/yr
Background Load = implicit
MOS Load = implicit
Total Available Load = 25.2 t/yr
Wasteload Allocation = 0.5 t/yr
Load Allocation = 24.7 t/yr
% reduction = 75.3%

TMDLs for Dry Creek

SEDIMENT
Critical time period = April to June
Critical Flow = 6.5 cfs
Existing Load = 286.8 t/yr
Background Load = implicit
MOS Load = implicit
Total Available Load = 52.0 t/yr
Wasteload Allocation = 1.0 t/yr
Load Allocation = 51.0 t/yr
% reduction = 81.9%

TMDLs for Little Wood River #4

NUTRIENTS - UPPER (#1)
Critical time period = June to September
Critical Flow = 131.9 cfs
Existing Load = 16.4 lbs/day
Background Load = 14.2 lbs/day
MOS Load = 1.64 lbs/day
Total Available Load = 0.50 lbs/day
Wasteload Allocation = 0.01 lbs/day
Load Allocation = 0.49 lbs/day
% reduction = 10.0%

NUTRIENTS - LOWER (#2)
Critical time period = June to September
Critical Flow = 483 cfs
Existing Load = 541.5 lbs/day
Background Load = 59.9lbs/day
MOS Load 26.0 lbs/day
Total Available Load = 174.4 lbs/day
Wasteload Allocation = 52.6 lbs/day
Load Allocation = 118.3 lbs/day
% reduction = 56.7%

SEDIMENT

Not available

Cold Water Aquatic Life Maximum Temperatures are Elevated on:

Fish Creek Above the Reservoir
Muldoon Creek
Little Wood River – Segment 1
Little Wood River – Segment 4

Salmonid Spawning Temperatures are Elevated on:

Fish Creek Above the Reservoir
Little Wood River – Segment 1
Little Wood River – Segment 4
Muldoon Creek
Loving Creek

Pollutants in the Camas Creek Subbasin: Nutrients, Bacteria Sediment

Flow altered creeks in the Camas Subbasin:

Camas Creek
Camp Creek
Elk Creek
Corral Creek
Soldier Creek
Wildhorse Creek
Dairy Creek
Mormon Reservoir

Streams to be removed from the list in impaired waters:

Beaver Creek, Willow Creek, Little Beaver Creek

Sediment Only TMDLs - Critical time period – March to May

Elk Creek
Existing Load = 148.9 t/yr
Total Available Load = 99.4 t/yr
Wasteload Allocation = 2.0 t/yr
Load Allocation = 97.4 t/yr

Corral Creek
Existing Load = 128.5 t/yr
Total Available Load = 48.9 t/yr
Wasteload Allocation = 1.0 t/yr
Load Allocation = 47.9 t/yr

Camp Creek
Existing Load = 320.1 t/yr
Total Available Load = 100.6 t/yr
Wasteload Allocation = 2.0 t/yr
Load Allocation = 98.6 t/yr

Soldier Creek
Existing Load = 817.5 t/yr
Total Available Load = 142.5 t/yr
Wasteload Allocation = 2.9 t/yr
Load Allocation = 139.7 t/yr

McKinney Creek
Existing Load = 6,323 t/yr
Total Available Load = 81.5 t/yr
Wasteload Allocation = 1.6 t/yr
Load Allocation = 79.9 t/yr

Cow Creek TMDLs

NUTRIENTS
Critical time period = March to June
Critical Flow = 6.4 cfs
Existing Load = 34.8 lbs/day
Background Load = 0.69 lbs/day
MOS Load = 0.17 lbs/day
Total Available Load = 0.86 lbs/day
Wasteload Allocation = 0.02 lbs/day
Load Allocation = 0.85 lbs/day

SEDIMENT
Critical time period = March to May
Existing Load 90.5 t/yr
Total Available Load = 17.7 t/yr
Wasteload Allocation = 0.4 t/yr
Load Allocation = 17.3 t/yr

Wildhorse Creek TMDLs

BACTERIA
Critical time period = June to September
Existing Load = 2,500 col/100/ml
Background Load = 2 col/100ml
MOS Load = 57.6 col/100ml
Total Available Load = 516.4 col/100ml
Wasteload Allocation = 10.3 col/100ml
Load Allocation = 506.1 col/100ml

SEDIMENT
Critical time period = March to May
Existing Load = 49.0 t/yr
Total Available Load = 34 lbs/day
Wasteload Allocation = 0.7 lbs/day
Load Allocation = 33.3 lbs/day

Camas Creek TMDLs

NUTRIENTS
Critical time period = June to September
Critical Flow = 47 cfs
Existing Load = 26.9 lbs/day
Background load = 5.1 lbs/day
MOS Load = 1.3 lbs/day
Total Available Load = 6.3 lbs/day
Wasteload Allocation = 0.1 lbs/day
Load Allocation = 6.21 lbs/day

SEDIMENT
Critical time period = March to May
Existing Load = 8,234.0 t/yr
Total Available Load = 725.8 lbs/yr
Wasteload Allocation = 14.5 lbs/yr
Load Allocation = 711.3 lbs/yr

Dairy Creek TMDLs

NUTRIENTS
Critical Time period = March to June
Critical Flow = 6.0 cfs
Existing Load = 2.7 lbs/day
Background load = 0.65 lbs/day
MOS Load = 0.16 lbs/day
Total Available Load = 0.81 lbs/day
Wasteload Allocation = 0.02 lbs/day
Load Allocation = 0.79 lbs/day

SEDIMENT
Critical time period = March to May
Existing Load = 1,745 t/yr
Total Available Load = 62.1 t/yr
Wasteload Allocation = 1.2 t/yr
Load Allocation = 6.9 t/yr

STREAM BANK EROSION INVENTORIES

September 28, 2004

Methodologies: There are many methodologies for determining stream bank erosion. This one developed from Corps of Engineers workshop in California. NRCS began using this method. It estimates length, height, and recession rates of erosion.

80% Stability: Targets of 80% stream bank stability:
- Salmon-Challis Forest Management Plan
- Salmon Challis Annual Monitoring Plan
- Inventory of Natural Conditions in the Salmon River Basin

80% stability found in range of channel types and stream orders

Land properly managed for sheep and cattle grazing exhibit 80% bank stability or higher:
- Viewed on lands around Henry's Lake
- Viewed on public lands that have been appropriately managed

Erosion methodology comparisons

Stream bank Erosion Inventory

vs

Rosgen's Bank Erosion Hazard Index

- parallel one another
- Rosgen's Bank Erosion Hazard Index yields higher numbers

Viewing Stream bank Erosion Loads

- View it as a way to prioritize implementation projects
- These are estimates not exact numbers
- Bight side: We could be using the Rosgen numbers and be working with larger numbers

Stream Bank Erosion Calculations:

Average Bank Height
- Average of erosive and non erosive banks
- Percent of Eroding Stream Bank
  Erosive bank length
  Divided by segment
- Bank erosion over sampled reach
  Eroding area
  Times
  Recession rate
  Times
  Bulk density

Erosion rate
- Bank erosion over sampled length
- Divided by
- the quality
  total inventoried length
  divided by 5280

Eroding bank extrapolation
- Feet of similar stream length
- Times
- Inventoried length
- Times
- Percent eroding bank
- Times
- 2

Total stream bank erosion
- The quantity of
  - The quantity
    - total inventoried length
    - plus
    - feet of similar stream length
  - divided by
  - 5280
- times
- erosion rate

Stream Bank Erosion Reduction Calculations

Bank erosion over sampled reach
- The quantity
  - total inventoried bank
  - times 2
  - times 0.2
  - times average height
- times
- rate recession
- times bulk density

Erosion rate
- Bank erosion over sampled reach
- Divided by
- The quantity
  - total inventory length
  - times 5280

Bank erosion over sampled reach

- The quantity
  - total inventoried bank
  - times 2
  - times 0.2
  - times average height
- times
- rate recession
- times bulk density

Erosion rate

- Bank erosion over sampled reach
- Divided by
- The quantity
  - total inventory length
  - times 5280

Feet of similar stream length

Total stream bank erosion

- Total quantity
  - total inventoried length plus
  - feet of similar type
- divided by
- 5280
- times
- erosion rate

60% Stability Lower

Stream Bank Erosion Calculations = 0.60
Ave. Bank Height: = 2.00 feet
Bank to bank Eroding Seg. Length = 800.00 feet
Percent eroding bank = 0.40
Bank erosion over sampled reach (E) = 6.48 tons/year/sample reach
Erosion Rate (ER) = 34.21 tons/mile/year
Feet of Similar Stream Type = 3000.00 feet
Eroding bank extrapolation = 3200.00 feet
Total stream bank erosion = 25.92 tons/year

Stream Bank Erosion Reduction Calculations

Bank erosion over sampled reach (E) = 1.80 tons/year/sample reach
Erosion Rate (ER) = 9.50 tons/mile/year
Feet of Similar Stream Types = 3000.00 feet
Eroding bank extrapolation = 1600.00 feet
Total stream bank erosion = 7.20 tons/year

80% Stability Upper

Stream Bank Erosion Calculations = 0.80
Ave. Bank Height: = 2.00 feet
Bank to bank Eroding Seg. Length = 400.00 feet
Percent eroding bank = 0.20
Bank eroding over sampled reach (E) = 3.24 tons/year/sample reach
Erosion Rate (ER) = 17.11 tons/mile/year
Feet of Similar Stream Type = 3000.00 feet
Eroding bank extrapolation = 1600.00 feet
Total stream bank erosion = 12.96 tons/year

Stream Bank erosion Reduction Calculations
Bank erosion over sampled reach (E) = 1.80 tons/year/sample reach
Erosion Rate (ER) = 9.50 tons/mile/year
Feet of Similar Stream Types = 3000.00 feet
Eroding bank extrapolation = 1600.00 feet
Total stream bank erosion = 7.20 tons/year

Summary Outcomes

Reach	Existing		Proposed			
	Erosion Rate (t/mi/y)	Total Erosion (t/y)	Erosion Rate (t/mi/y)	Total Erosion (t/y)	Erosion Ra	% of
Upper	17.1072	12.96	9.504	7.2	44	33.3
Lower	34.2144	25.92	9.504	7.2	72.2	66.7
	Total Erosion (t/y)	38.88		14.4		

1.0 Foot Bank Height Upper

Stream Bank Erosion Calculations
Ave. Bank Height = 1.0 feet
Bank to bank eroding Seg. Length = 800.0 feet
Percent eroding bank = 0.4
Bank erosion over sampled reach (E) = 3.2 tons/year/sample reach
Erosion Rate (ER) = 17.1 tons/mile/year
Feet of Similar Stream Type = 3000.0 feet
Eroding bank extrapolation = 3200.0 feet
Total stream bank erosion = 13.0 tons/year

Stream Bank Erosion Reduction Calculations
Bank erosion over sampled reach (E) = 0.9tons/year/sample reach
Erosion Rate (ER) = 4.8 tons/mile/year
Feet of Similar Stream Types = 3000.0 feet
Eroding bank extrapolation = 1600.00 feet
Total stream bank erosion = 3.6 tons/year

2.0 Bank Height Lower

Stream Bank Erosion Calculations
Ave. Bank Height = 3.0 feet
Bank to bank Eroding Seg. Length = 800.0 feet
Percent eroding bank = 0.4
Bank erosion over sampled reach (E) 9.7 tons/year/sample reach
Erosion Rate (ER) = 51.3 tons/mile/year
Feet of Similar Stream Type = 3000.0 feet
Eroding bank extrapolation = 3200.0 feet
Total stream bank erosion = 38.9 tons/year

Stream Bank Erosion Reduction Calculations
Bank erosion over sampled reach (E) = 2.7 tons/year/sample reach
Erosion Rate (ER) = 14.3 tons/miles/year
Feet of Similar Stream Types = 3000.0 feet
Eroding bank extrapolation = 1600.0 feet
Total stream bank erosion = 10.8 tons/year

Bank Height Summary Outcome

Reach	Existing		Proposed			
	Erosion Rate (t/mi/y)	Total Erosion (t/y)	Erosion Rate (t/mi/y)	Total Erosion	% reduction	Percent of total
Upper	17.1	13.0	4.8	3.6	72.2	25.0
Lower	51.3	38.9	14.3	10.8	72.2	75.0
	Total Erosion (t/y)	51.8		14.4		

Recession Rates Lower

Stream Bank Erosion Calculations
Ave. Bank Height = 1.0 feet
Bank to bank Eroding Seg. Length = 400.0 feet
Percent eroding bank = 0.2
Bank erosion over sampled reach (E) = 9.0 tons/year/sample reach
Erosion Rate (ER) = 47.5 tons/mile/year
Feet of similar stream type = 3000.0 feet
Eroding bank extrapolation = 1600.0 feet
Total Stream bank erosion = 36.0 tons/year

Stream Bank Erosion Reduction Calculations
Bank erosion over sampled reach = 0.9 tons/year/sample reach
Erosion Rate (ER) = 4.8 tons/mi/yr
Feet of Similar Stream Types = 3000.0 feet
Eroding Bank extrapolation = 1600.0 feet
Total stream bank erosion = 3.6 tons/year

Recession Rates Upper

Stream Bank Erosion Calculations
Ave. Bank Height = 1.0 feet
Bank to bank Eroding Seg. Length = 400.0 feet
Percent eroding bank = 0.2
Bank erosion over sampled reach (E) = 1.0 tons/year/sample reach
Erosion Rate (ER) = 5.2 tons/mile/year
Feet of Similar Stream Type = 3000.0 feet
Eroding Bank extrapolation 1600.0 feet
Total Stream Bank Erosion = 4.0 tons/year

Stream Bank Erosion Reduction Calculations
Bank erosion over samples reach = 0.9 tons/year/sample reach
Erosion Rate (ER) = 4.8 tons/mile/year
Feet of Similar Stream Types = 3000.0 feet
Eroding bank extrapolation = 1600.0 feet
Total stream bank erosion = 3.6 tons/year

Recession Rates Summary Outcomes

Reach	Existing		Proposed			
	Erosion Rate (t/mi/y)	Total Erosion (t/y)	Erosion Rate (t/mi/y)	Total Erosion(t/y)	Erosion Rate % Red:	% of total
Upper	5.2	4.0	4.8	3.6	9.1	9.9
Lower	47.5	36.0	4.8	3.6	90.0	90.1
	Total Erosion (t/y)	40.0		7.2		

Where upon the meeting was adjourned.

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Daryle James, Chairman